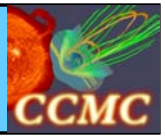
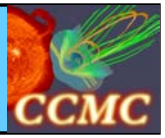


3-D Visualization With OpenDx

Judy Johnson, GSFC

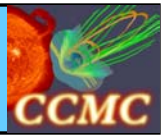
CCMC Workshop

Kihei, Maui, HI Oct. 28-31, 2003



Visualization Goals

- Develop a 3-D visualization capability that will help the Space Weather Community understand the complexities of the space environment.
- Make this visualization software user-friendly, inexpensive and easily portable.
- OpenDX is free, open-source software with many features that are useful for viewing model output.

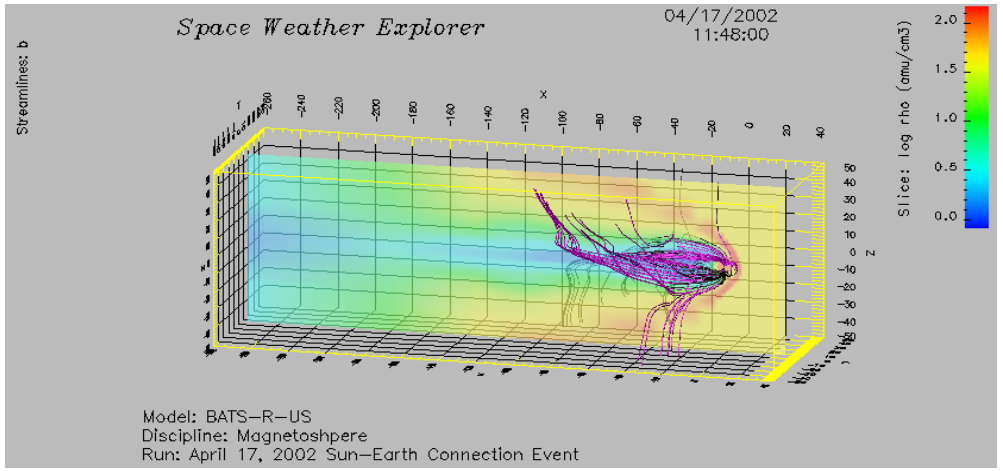


Current Capabilities

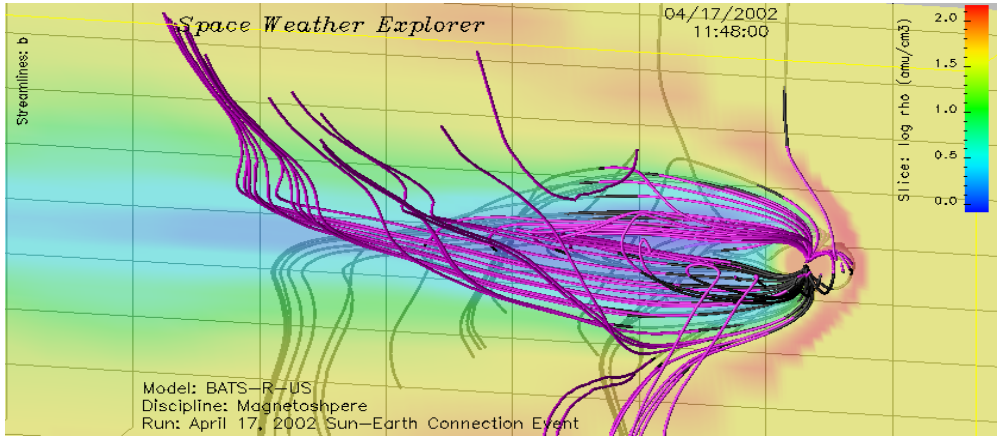
- Models: BATS_R_US now, others when standard data format interface is complete
- Plots: 2-D slices w optional contour lines, isosurfaces, volumes, streamlines, vectors - for the entire simulation box or subdomains

Magnetospheric model: BATS_R_US
Run: April 17, 2002 11:48:00

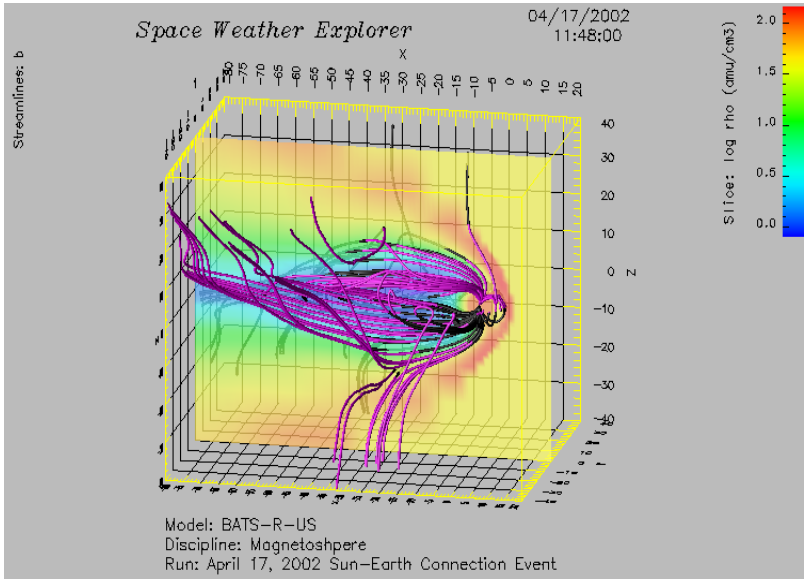
- 2-D slice (x-z plane)
  Density
  Magnetic field lines

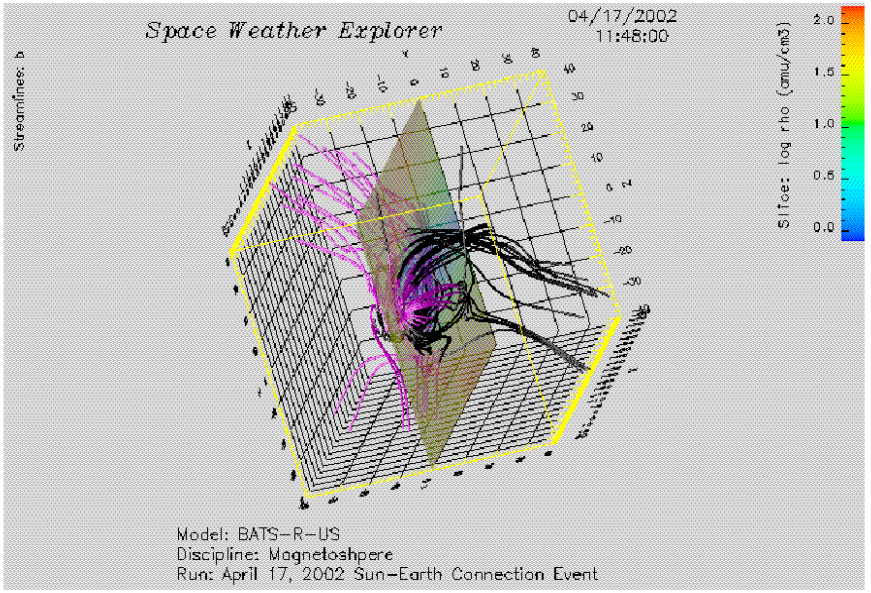


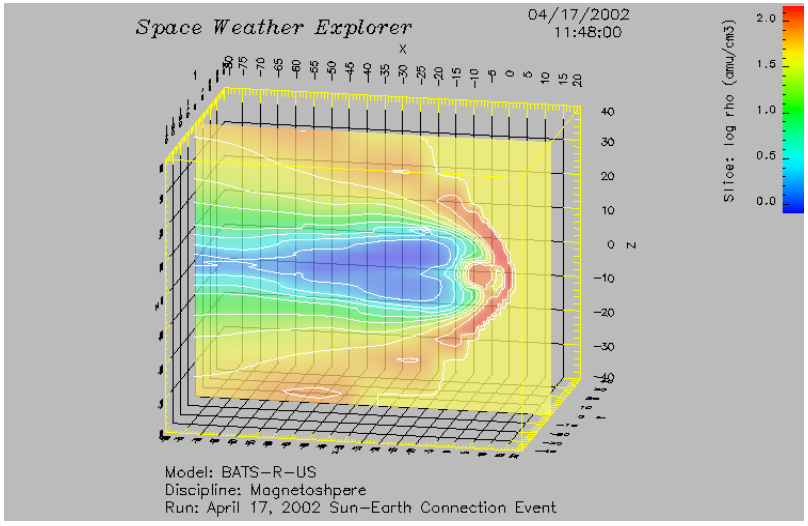
- Same 2-D slice
  Zoomed

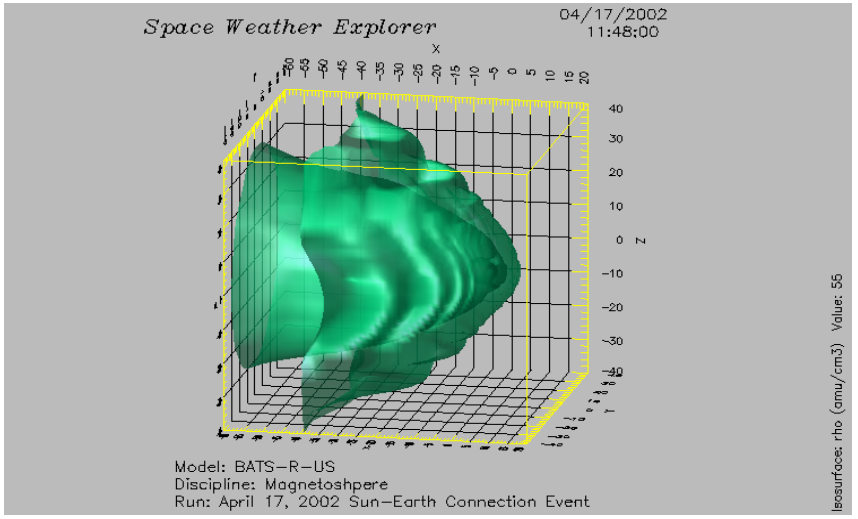


COMMUNITY COORDINATED MODELING CENTER

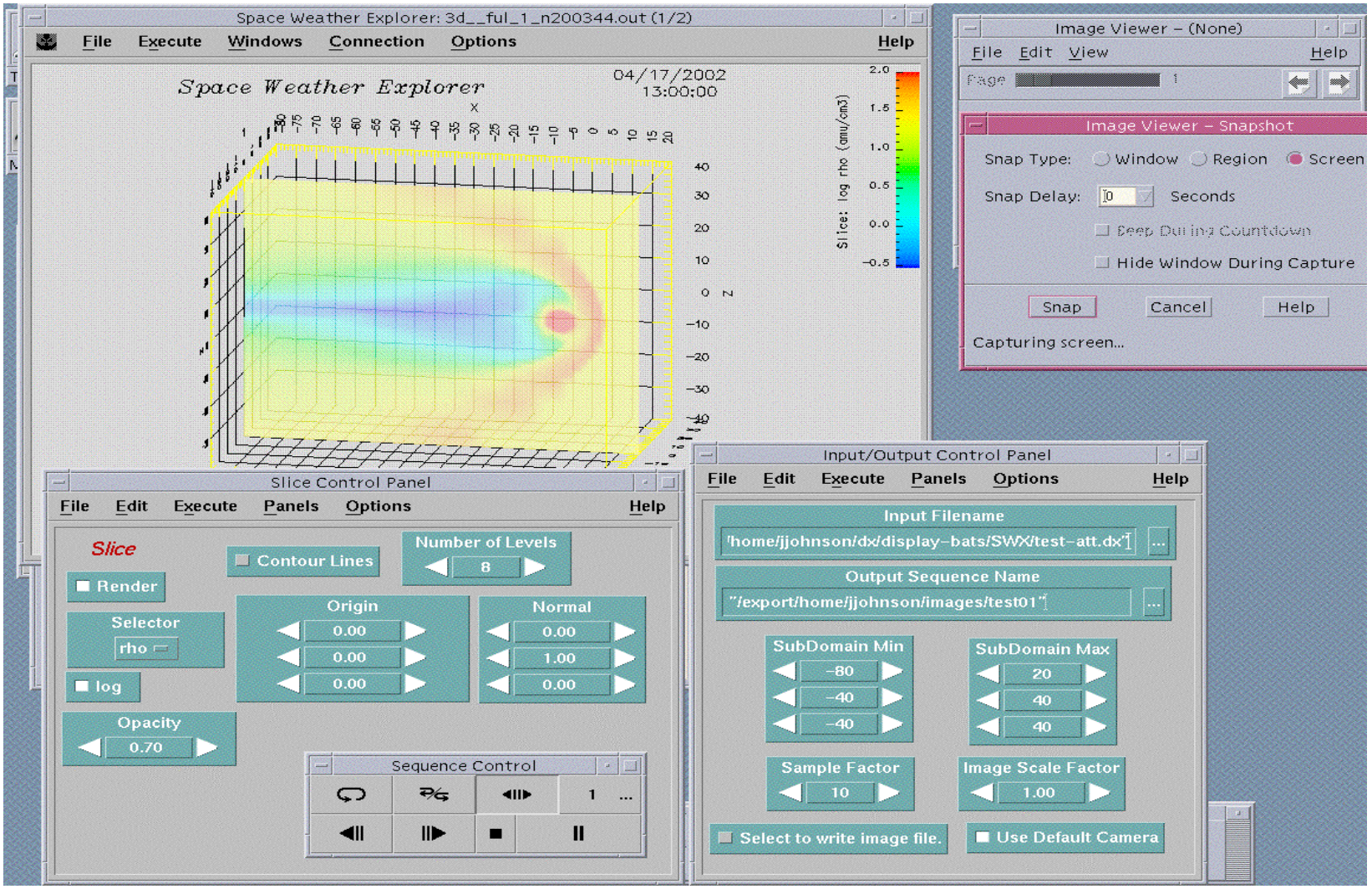




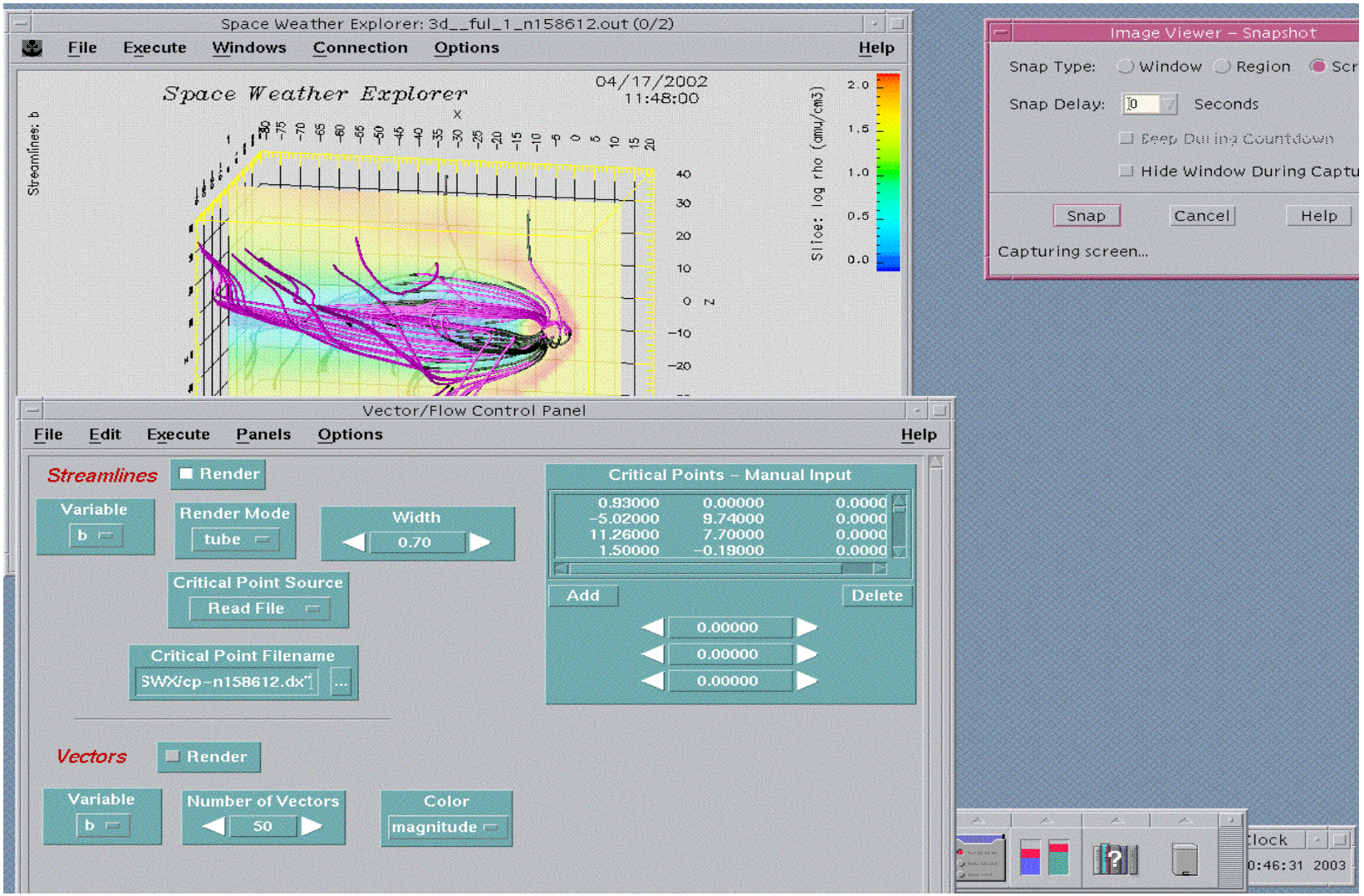


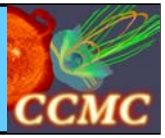


Screen View of Input/Output and Slice Control Panels



Screen View of Vector/Flow Control Panel





Future Plans

- Adapt the software for use with other models
- Implement a web interface for access to 3-D visualizations
- Make software available to scientists and Rapid Prototyping Centers
- Respond to requests from the Space Weather Community for additional features